

## ABSTRACT

- A system for optimising the production performance of a milk producing animal herd is provided. The system comprises milk sampling means, analytical means comprising separate means for analysing compounds or parameters that in the presence of compounds indicative of the physiological or nutritional condition of the herd member, generates detectable signals, and means for directing a part of the milk sample to each separate analysing means which is controlled by data for the physiological and nutritional state of a herd member such that the directing means is only activated at pre-selected points in time or at pre-selected time intervals in the production and or lactation cycles. Specific compounds are compounds indicative of mastitis, including beta-N-acetylhexosaminidase (NAGase) E.C. 3.2.1.52 and lactate dehydrogenase (LDH), protein balance, including milk urea nitrogen (MUN) and total protein, ketosis, including acetolactate, beta-hydroxybutyrate, acetone and lipids, fat and state in reproduction cycle, including a steroid or peptide hormone such as progesterone. Furthermore, the system comprises signal detection means for recording and processing the signals, means for data storage and data output means. Additionally there are provided methods for optimising the production performance of a milk producing animal herd and an apparatus herefor.